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PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/720,755
Filing Date	02/20/2001
First Named Inventor	Robert W. Turnbull
Group Art Unit	1724
Examiner Name	Peter A. Hruskoci

Total Number of Pages in This Submission

Attorney Docket Number 185823 (8830-207)

ENCLOSURES (check all that apply)

☒ Fee Transmittal Form

☒ Fee Attached

☒ Amendment/Reply

☐ After Final

☐ Affidavits/declaration(s)

☐ Extension of Time Request

☐ Express Abandonment Request

☐ Information Disclosure Statement

☐ Certified Copy of Priority Document(s)

☐ Response to Missing Parts/Incomplete Application

☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

☐ Assignment Papers (for an Application)

☐ Drawing(s) – Figs.

☐ Licensing-related Papers

☐ Petition

☐ Petition to Convert to a Provisional Application

☐ Power of Attorney, Revocation Change of Correspondence Address

☐ Terminal Disclaimer

☐ Request for Refund

☐ CD, Number of CD(s)

☐ After Allowance Communication to Group

☐ Appeal Communication to Board of Appeals and Interferences

☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)

☐ Proprietary Information

☐ Status Letter

☒ Other Enclosure(s)

(please identify below):
Petition for Revival w/Attachment to Petition for Revival; check in the amount of \$1330.00

Remarks:

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name Gregory J. Lavorgna, Reg. No. 30469

Signature

Date

July 23, 2004

CERTIFICATE OF MAILING UNDER 37 CFR 1.8

I hereby certify that this paper, along with any documents referred to as being enclosed therewith, is being deposited with the United States Postal Service in an envelope addressed to U.S. Patent Office, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: July 23, 2004.

Typed or printed name Michelle D. Sebastian

Signature

Date: July 23, 2004

**FEE TRANSMITTAL
for FY 2003**

Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$1330.00)**METHOD OF PAYMENT** (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None☐ Deposit Account:Deposit Account Number 50-0573Deposit Account Name Drinker Biddle & Reath LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee required under 37 CFR 1.16 and 1.17☐ Charge fee(s) indicated below, except for the filing fee

to the above-identified deposit account.

FEE CALCULATION**1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	\$
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					\$

2. EXTRA CLAIMS FEES FOR UTILITY AND REISSUE

				Extra Claims	Fee from below	Fee Paid
Total Claims	*	-20**	=	0	X	\$ 0
Independent Claims	*	- 3**	=	0	X	\$ 0
Multiple Independent			+	290/145=		\$

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee Code	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) \$ 0

**or number previously paid, if greater; For Reissue, see above

SUBMITTED BY CUSTOMER NO. 23973**Complete if known**

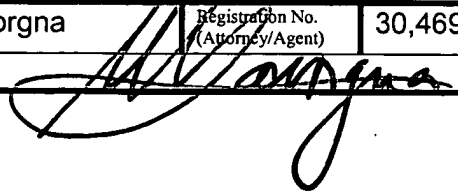
Application Number 09/720,755
Filing Date 02/20/2001
First Named Inventor Robert W. Turnbull
Examiner Name Peter A. Hruskoci
Group Art Unit 1724
Attorney Docket No. 185823 (8830-207)

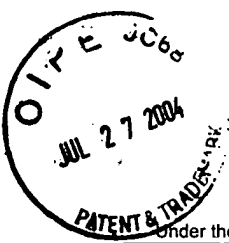
FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Fee Code	Large Entity Fee (\$)	Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130			Non-English specification	
1812	2,520			For filing a request for <i>ex parte</i> reexamination	
1804	920*			Requesting publication of SIR prior to Examiner action	
1805	1,840*			Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510			Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	1330
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130			Petition to the Commissioner	
1807	50			Processing fee under 37 CFR 1.17(q)	
1806	180			Submission of Information Disclosure Stmt	
8021	40			Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900			Request for expedited examination of a design application	
Other fee (specify)					

*Reduced by Basic Filing Fee Paid
\$1330**SUBTOTAL (3)**

Complete (if applicable)

Name (Print/Type) Gregory J. Lavorgna **Registration No. (Attorney/Agent)** 30,469 **Telephone** (215) 988.2700
Signature  **Date** July 23, 2004



IFW
DAC \$
A

PTO/SB/64 (11-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED
UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Docket Number (Optional)
185823 (8830-207)

First named inventor: Robert William Turnbull

Application No.: 09/720,755

Art Unit: 1724

Filed: 02/20/2001

Examiner: P. Hruskoci

Title: COALESCER

Attention: Office of Petitions
Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
FAX: (703) 308-6916

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (703) 305-9282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the Office notice or action plus an extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee --required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

1. Petition fee

☐ Small entity-fee \$ _____ (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☒ Other than small entity - fee \$ 1330.00 (37 CFR 1.17(m)) 07/28/2004 SZEWDIE1 00000006 09720755
01 FC:1453 1330.00 OP

2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in

the form of Amendment and Response (identify type of reply):

- ☐ has been filed previously on _____.
- ☒ is enclosed herewith.

B. The issue fee and publication fee (if required) of \$ _____.

- ☐ has been paid previously on _____.
- ☐ is enclosed herewith.

This collection of information is required by 37 CFR 1.137. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

3. Terminal disclaimer with disclaimer fee

- ☐ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.
- ☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ _____ for a small entity or \$ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE. The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D))].

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

23 July 2004

Date

Telephone

Number: 215.988.3309

Signature

Gregory J. Lavorgna

Typed or printed name

Drinker Biddle & Reath 1 Logan Square

Address

Philadelphia, PA 19103

Address

Enclosures: ☒ Fee Payment

☒ Reply

☐ Terminal Disclaimer Form

☐ Additional sheets containing statements establishing unintentional delay

☒ Other: Attachment to Petition for Revival

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☒ deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: **Mail Stop Petition**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☐ transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (703) 308-6916.

23 July 2004

Date

Signature

Michelle D. Sebastian

Type or printed name of person signing certificate

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard William Turnbull

Application No.: 09/720,755

Group Art Unit: 1724

Filed: 02/20/2001

Examiner: P. Hruskoci

Title: Coalescer

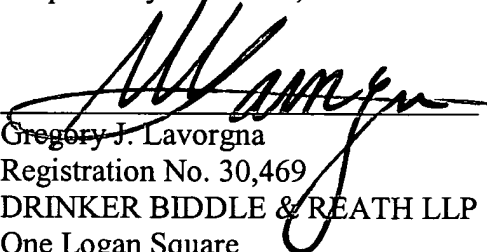
Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attachment to Petition for Revival

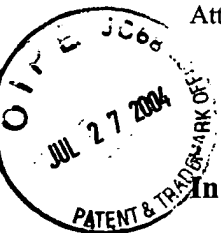
Statement

Applicant submits that the entire delay in responding to the Office Action mailed July 23, 2003 was unintentional. Applicant never received the above-referenced Office Action and only discovered that the Office Action had been issued when he transferred this application from Applicant's previous representative to his current, below-signed representative, who contacted the Examiner to determine the status of the application and discovered the abandonment. Applicant immediately executed and filed a Revocation of Power of Attorney - New Power of Attorney, which included a change of address. A Notice of Acceptance of Power of Attorney was mailed June 4, 2004. Applicant then ordered and obtained a copy of the file history of the instant application in order to prepare and file a response to the above-referenced Office Action.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard William Turnbull

Application No.: 09/720,755

Group Art Unit: 1724

Filed: 02/20/2001

Examiner: P. Hruskoci

Title: Coalescer

Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND RESPONSE

Sir:

This amendment and response is filed in response to the Office Action mailed July 23, 2003 and is accompanied by a Petition to Revive.

In the Specification:

Please AMEND the specification as follows:

Page 9, lines 15 -26:

Inside the pipe 1 are the coalescing media 5, which are supported at one end only by a media retainer plate 4. The media 5 may be bundles 16 of fibres 30 secured through apertures 11 in the media retaining plate 4 by means of a knot 8, as shown in detail in Fig. 3. The fibres 30 are then free to extend along the interior of the pipe towards the second end under the action of liquid flowing along the pipe towards ~~he~~ the outlet 22. Alternatively the fibres 30 may be a single bundle 17 of individual fibres folded in half around a media retaining pin 14, and secured to the pin 14 by a tie 18 which encircles the folded bundle 17.

In the Claims:

Please AMEND the claims as follows:

1. (Currently Amended) An apparatus for coalescing droplets of one phase from a fluid comprising two or more phases, said apparatus comprising a chamber, a coalescing medium comprising a plurality of substantially elongate members each having a surface area, a retaining member to which the coalescing medium is secured, an inlet to said chamber, and an outlet from said chamber, said inlet and outlet being positioned such that fluid flowing from said inlet to said outlet flows in a flow direction in contact with said surface area of said coalescing medium, the elongate members extending substantially in the flow direction, characterised in that said chamber is formed from a substantially straight pipe having a first end and a second end and a branch intermediate said first and second ends, the intermediate branch having a free end, wherein the retaining member is located at the second end of the chamber such that the intermediate branch is located between the retaining member and the first end, said outlet being arranged at the first end and an access cover being arranged at the second end, said inlet being arranged at the free end of said branch, wherein said access cover is adapted to allow removal and replacement of the retaining member and coalescing medium.
2. (Original) An apparatus in accordance with Claim 1, wherein said retaining member is adapted to be removably engaged within said chamber.
3. (Previously Amended) An apparatus in accordance with Claim 1, wherein the interior of said chamber is provided with a shoulder adapted to engage with said retaining member.
4. (Original) An apparatus in accordance with Claim 3, wherein said access cover is adapted to hold said retaining member against said shoulder when the access cover is attached to the pipe.

5. (Previously Amended) An apparatus in accordance with Claim 1, wherein said retaining member is provided with one or more apertures for securing said coalescing medium to said retaining member.
6. (Original) An apparatus in accordance with Claim 1, wherein said plurality of elongate members are substantially mutually aligned fibres.
7. (Original) An apparatus in accordance with Claim 6, wherein said coalescing medium comprises ribbon-like fibres.
8. (Original) An apparatus in accordance with Claim 6, wherein said fibres are selected from the group of materials comprising polypropylene, metal wire, animal hair, polyethylene, polyester, and glass wool.
9. (Previously Amended) An apparatus in accordance with Claim 1, wherein said coalescing medium comprises one or more polypropylene ropes.
10. (Currently Amended) A method for coalescing droplets of one phase from a fluid comprising two or more phases using the apparatus of ~~any preceding~~ Claim 1, in which the fluid is caused to flow in a flow direction through the chamber, each of the plurality of substantially elongate members being substantially aligned in the flow direction, such that the fluid flows in contact with said surface area of said coalescing medium and droplets of a first phase of said fluid coalesce on said surface area.
11. (Previously Presented) A method in accordance with Claim 10, wherein the fluid is a liquid.
12. (Previously Presented) A method in accordance with Claim 11, wherein the fluid is a mixture of water and oil, and wherein the first phase is oil.

13. (Currently Amended) An apparatus for coalescing droplets of one phase from a fluid comprising two or more phases, said apparatus comprising a chamber, a coalescing medium comprising a plurality of substantially elongate members each having a surface area, a retaining member to which the coalescing medium is secured, an inlet to said chamber, and an outlet from said chamber, said inlet and outlet being positioned such that fluid flowing from said inlet to said outlet flows in a flow direction in contact with said surface area of said coalescing medium, the elongate members extending substantially in the flow direction, characterised in that said chamber is formed from a substantially straight pipe having a first end and a second end and a branch intermediate said first and second ends, the intermediate branch having a free end, wherein the retaining member is located at the second end of the chamber such that the intermediate branch is located between the retaining member and the first end, said outlet being arranged at the first end and an access cover being arranged at the second end, said inlet being arranged at the free end of said branch, wherein said access cover is adapted to allow removal and replacement of the retaining member and coalescing medium;

said retaining member is being adapted to be removably engaged within said chamber;

wherein the interior of said chamber is provided with a shoulder adapted to engage with said retaining chamber.

Remarks

Claims 1-13 are currently pending. The specification has been amended to correct a typographical error per the Examiner's request. Claims 1 and 13 have been amended. No new matter has been added. Entry of the amendments is respectfully requested.

Election of Claims

Claims 10-12 were withdrawn from consideration as non-elected without traverse in response to a prior restriction requirement. Claim 10, a method claim, is amended herein to be dependent from claim 1, an apparatus claim. Claim 11 depends from claim 10, and claim 12 depends from claim 11, and thus both indirectly depend from claim 1. Claim 1 is deemed allowable for the reasons set forth more fully hereinbelow. Applicant therefore requests that claims 10-12 be rejoined and that the restriction requirement be withdrawn. M.P.E.P. § 821.04.

Objection to the Disclosure

The disclosure was objected to for a typographical error on page 9. Applicant has amended the disclosure to correct the error. Therefore, the objection is now moot, and it is respectfully requested that the objection be withdrawn.

Rejections under 35 USC 112

Claims 1-9 and 13 were rejected under 35 USC 112, second paragraph, as being indefinite for lacking clear antecedent basis for "the free end." Claims 1 and 13 have been amended to recite a clear antecedent basis for "the free end." Therefore, the rejection is now moot, and it is respectfully requested that the rejection be withdrawn.

Rejections under 35 USC 103

Claims 1-9 and 13 were rejected under 35 USC 103(a) as unpatentable over Hughes (US 4,640,781) in view of Williamson *et al.* (US 5,480,547). Applicant requests that the rejection be withdrawn, as more fully explained in the remarks below.

Claims 1 and 13 have been amended to include the feature that the retaining member is located at the second end of the chamber such that the intermediate branch is located between the

retaining member and the first end. Basis for this amendment can be found in Fig. 2 of the application as filed, which shows the plate 4 located at the second end 3 of the chamber.

The Examiner regarded the invention as obvious over Hughes in view of Williamson *et al.* because Williamson *et al.* has a branch inlet 22 located intermediate the first and second ends of the housing 20.

Claims 1 and 13 have been amended to more precisely define the intermediate branch as being located between the retaining member and the first end. This is entirely different from Williamson *et al.*'s device, where the intermediate branch is located upstream of the retaining member, and not between the retaining member and the first end of the chamber (defined in the claim as the end which has the outlet 24). Therefore, Williamson *et al.*'s device does not have an intermediate branch as claimed in amended claims 1 and 13.

Williamson's device is actually technically very similar to Hughes' device. Williamson *et al.*'s chamber is split into two parts by the tube sheet 28 and Hughes' chamber corresponds to the separating region 40 downstream of the tube sheet 28. In both cases, fluid flows past the retaining member and into and through the coalescing element 30 in a coaxial direction. Both Hughes' and Williamson *et al.*'s devices have the disadvantage that the fluid entering the coalescer necessarily passes the retaining member, which causes an undesirable pressure drop. This is because the fluid inlet is not located between the retaining member and the first (outlet) end of the chamber. Instead, the fluid inlet is located upstream of the retaining member.

In contrast, the use of the intermediate branch between the retaining member and the first end of the chamber, as claimed, means that the fluid entering the coalescer does not pass the retaining member, which avoids this pressure drop. The present specification describes how tests have shown that pressure drops across the coalescer of less than one bar may be achieved (page 10, lines 7 to 9). The pressure drop will depend to a large extent on the flow characteristics of the fluid and the present specification describes how the size and dimensional shape of the coalescer will be dependent on these flow characteristics which includes the desired or allowable system pressure drop (page 7, lines 31 to 36).

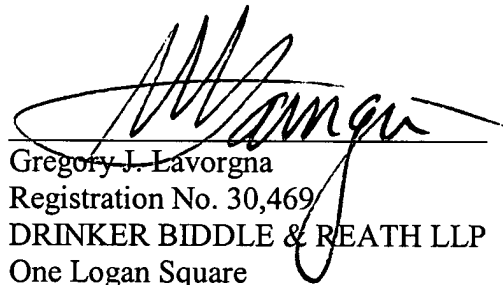
Furthermore, the branch inlet of the present invention has been designed to promote wetting by droplet impact and a certain degree of turbulence. Turbulence is essential to generate vibration in the fibres to improve the coalescing effect and to promote droplet flow along the fibres. No such turbulence would be created in the prior art devices, which promote linear fluid

flow coaxial to the coalescing element. Therefore, the invention of the amended claims is nonobvious over Hughes in view of Williamson *et al.*

Applicant deems that all pending claims are in condition for allowance, and Applicant respectfully requests that allowance be granted at the earliest date possible. Should the Examiner have any questions or comments regarding Applicant's amendments or response, the Examiner is asked to contact Applicant's undersigned representative at (215) 988.2700.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0573.

Respectfully submitted,



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